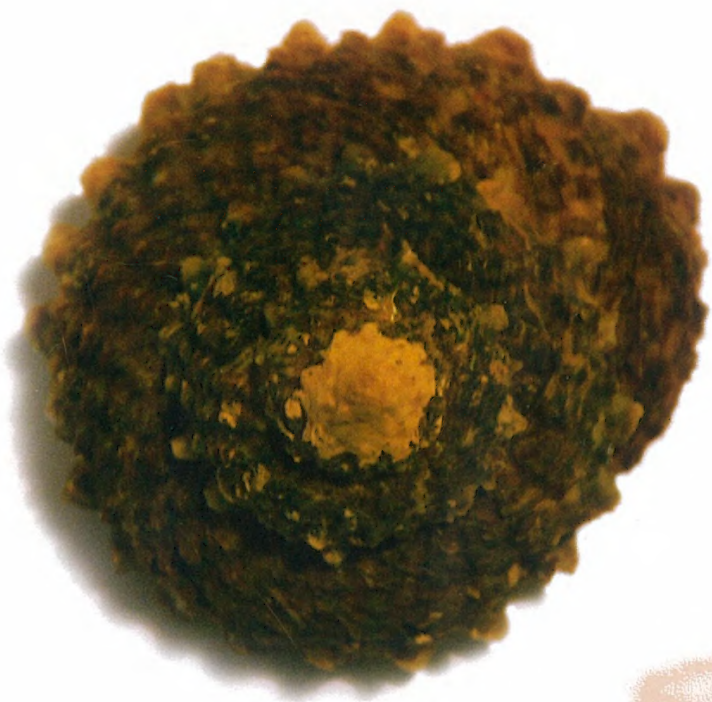
COOKIA

Journal of the Wellington Shell Club, New Zealand

VOLUME 22, NOVEMBER 2010



NEW ZEALAND SEASHELL VISUAL GUIDE

TRIP TO BOUGAINVILLE, PAPUA NEW GUINEA

NZ COASTAL MARINE INVERTEBRATES

A VISIT TO GREAT BARRIER ISLAND

FINDING PHYLLONOTUS POMUM

Editor's Choice

Thalassocyon tui Dell, 1967 – Jenny Raven collection.

Cookia Volume 22, November 2010

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ISSN-1171-140X

FRONT COVER PHOTO:
Cookia sulcata (Lightfoot, 1786)
80mm specimen collected from the Chatham Islands, New Zealand by Jenny Raven.

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Editorial

Reflecting on the events of 2010 would focus on:

1) The trip to Motueka made by members of the club from both the south and north islands.

2) The opportunity to view the national collection again, but for some their first visit.

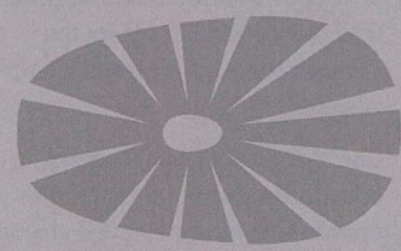
3) The publishing of the book by Jenny Raven and Selwyn Bracegirdle *New Zealand Seashells Visual Guide*.

4) The trip to the Auckland Shell Club's auction made by some of the Wellington Shell Club members.

5) Numerous meetings during the year providing much interest from finds made around New Zealand and overseas, and the sharing of knowledge and information about species and collecting.

6) The encouragement received from correspondence and interaction with other clubs around the world.

7) More recently, the planning and anticipation surrounding the New Zealand Shell Show that the Wellington Shell Club is hosting 12-13 February 2011 has spiked interest. Our Shows have been well supported by club members and the Wellington public in the past, and we are planning for the same in February. But we need contributions from all our members. At least one display from every member will give the public a great variety of exhibits to view. Don't leave it to a few - be a participant!



The phylogeny and taxonomy of New Zealand Notoacmea and Patelloida species (Mollusca: Patellogastropoda: Lottiidae) inferred from DNA sequences

Tomoyuki Nakano, Bruce A. Marshall, Martyn Kennedy & Hamish G. Spencer
Molluscan Research Vol 1, 2009.

REVIEWED by Pat Lakeman

This paper points out that limpets are a diverse and ecologically important group of molluscs. They are found throughout the world's oceans, from tropical to polar regions, and from the deep sea to well above the high tide line.

In the past, taxonomic studies of the lottiid limpet genus *Notoacmea* Iredale, 1915 have been based on shell morphology and radular characters alone. Because limits of variation have been poorly understood, systematics of *Notoacmea* has been confused.

Recent revisions have meant that *Notoacmea* now includes solely the species from New Zealand and Australian waters. The objective of this study was to explore the species boundaries among the New Zealand species using DNA sequencing. The study used the allied genus *Patelloida* Quoy & Gaimard, 1834 as an outgroup. Both *Notoacmea* and *Patelloida* are readily distinguished as genera on radular characters – *Notoacmea* by lack of marginal teeth and *Patelloida* by presence of two marginal teeth on each side of each cross row.

For this study, specimens were collected at 39 intertidal shore sites on mainland New Zealand, between Bay of Islands and Southland, as well as three additional sites from the subantarctic Auckland and Campbell islands.

The study established species boundaries that were difficult to establish on morphological characters alone. The following species were recognised - *Notoacmea badia, N. cellanoides, N. daedala, N. elongata, N. parviconoidea, N. pileopsis, N. scapha, N. scopulina, N. sturnus, N. subantarctica, Patelloida corticata*, and three new *Notoacmea* species, *N. potae, N. rapida*, and *N. turbatrix*. *Notoacmea daedala* and *N. subantarctica* are resurrected from synonymy. *Notoacmea helmsi* and *N. virescens* are interpreted as synonyms of *N. elongata*.

Further work remains to compare anatomies of the different species, to establish precise species distributions, and to explore relationships with the Australian species, as well as to resolve the limits and relationships of *Notoacmea*.

Polyphenism – the occurrence of different physical characteristics among members of a population that is not attributable to genetic differences – is revealed for *N. badia, N. parvaconoidea* and *Patelloida corticata*. Other noteworthy results from the study include:

- convergence in shell morphology between *N. scopulina* and some individuals of *P. corticata* – especially surprising given the genetic distance between these taxa;
- variation in the colour of the animal within the species *P. corticata* – although most are white, some are orange;
- the rapid movement exhibited by *N. rapida,* which appears to be a light-avoiding response; and
- the remarkable similarity between *N. elongata* and *N. daedala* – no conchological or ecological difference was detected between them and they are sympatric to the degree that both may be found under a single rock. Despite this, they are clearly genetically distinct and show no evidence of interbreeding.

The paper includes four colour plates showing some of the amazing range of colour and colour pattern variation in each species. Maps show localities for sequenced specimens in the present study (the range of most species will be greater than the locations shown).

A light note is contained in the name assigned to *N. turbatrix* – Latin for trouble-maker, reflecting the difficulty the authors experienced in recognizing this species.

NEW ZEALAND
SHELL SHOW 2011
LOWER HUTT
TOWN HALL
12-13 February 2011
Contact the Wellington Shell Club secretary at:
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or telephone 64-4-9041080
or write to: 4 Sharda Grove, Paraparaumu Beach 5032, New Zealand

New Zealand Seashells Visual Guide

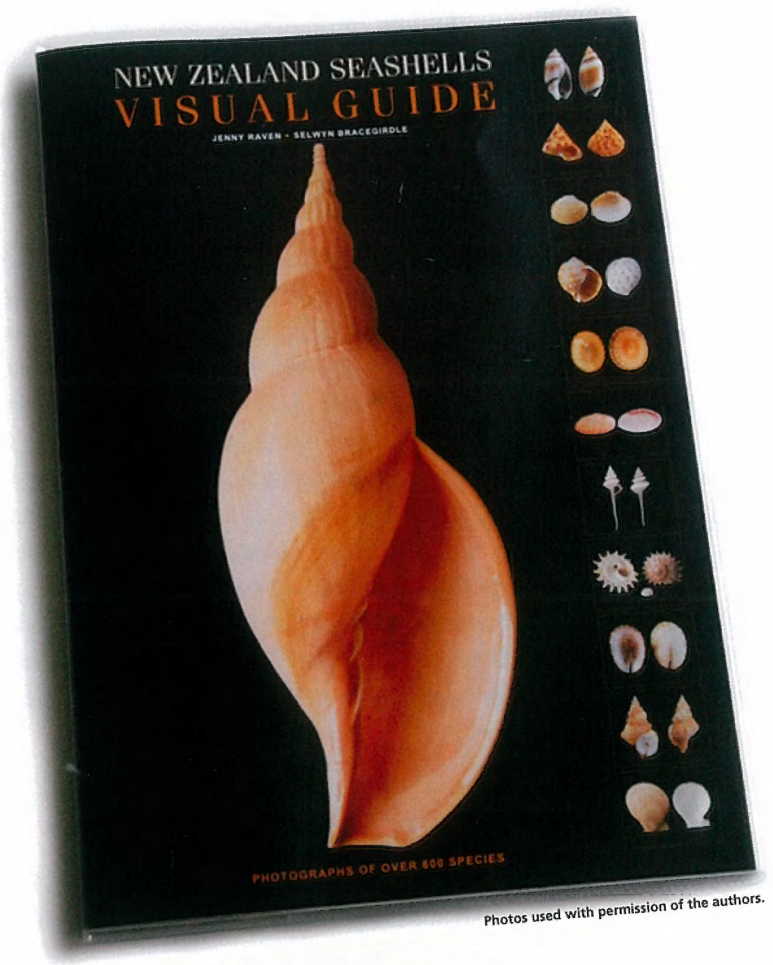
by Jenny Raven & Selwyn Bracegirdle, Creatus Design, Wellington 2010

REVIEWED by Hamish Spencer

Photographing the commoner elements of the living New Zealand marine molluscan fauna is a big job. The total molluscan fauna from the Exclusive Economic Zone, including undescribed taxa, has been estimated to be just under 4,600 species and subspecies (Spencer et al. 2009), of which almost 80% are marine. Even if we count just the described taxa and exclude those species without shells, such as sea slugs and most cephalopods, the number of known seashell species is well over 2,000. Of course, many of these are minute and found only at great depths and so are unlikely to come to the attention of most collectors. Jenny Raven and Selwyn Bracegirdle's new book illustrates the rest: over 800 species of shelled marine molluscs that an assiduous collector might reasonably be expected to come across somewhere in the country (and a few more that would be very hard to find).

Each species is depicted separately, in colour, on a black background, usually with two or more individuals shot from two consistent angles, for example, with bivalves having the inner and outer sides of the shell shown. The photographs are beautifully clear, well lit and always in perfect focus. The latest scientific name, including the author and date is given, as well as a brief range description, the size of the shell, a reference to the relevant page in Powell (1979) (if applicable), an indication of the species' ease of collection and likely places it might be found (both particular geographical localities and general descriptions, such as in shell sand or on low tidal algae), and distinguishing identification points. The species are ordered by class and then by family, following the order in the online checklist by Spencer et al. (2010). The nomenclature is completely up to date; even the recent substitution of the well-known generic name *Austrofusus* by *Aethocola* (see Beu & Marshall 2010) is there.

With up to 20 species on an A4-sized page, the photographs are inevitably rather small, each just 45x35 mm, which means most gastropods, for example, are shown at ~30 mm in height. One consequence of the layout, with all photographs of the same size, is that one cannot judge the size of the species from the photograph. Nevertheless, the desirability of having larger photographs and allowing some natural indication of size has to be balanced with the inevitably greater cost of a bigger book. My view is that the finished product is a reasonable



Photos used with permission of the authors.

New Zealand Seashells Visual Guide
Available in New Zealand NZ$89.90 (incl post)
To Australia NZ$99.90 (incl post)
To other countries NZ$109.90 (incl post)

Available from Selwyn Bracegirdle
creatus@paradise.net.nz (PayPal accepted)
or the publisher Creatus Design
PO Box 17034, Karori, Wellington 6012, New Zealand

compromise, especially given the large number and high quality of the photographs.

The authors have been very careful over their proof reading. I know from my own molluscan writings how difficult it is to be completely accurate. So I was amazed and delighted that I was unable to find any typographical errors in this guide. One error I did spot was the habitat description for *Notoacmea pileopsis*, which occurs at and above the high-tide mark, not at low tide. And I could grumble about the large number of species that are listed as being found in beach drift – almost every species of *Cellana* and *Diloma*, for instance. While such species can be found in shell sand, that is true of almost any mollusc that lives intertidally, and many are easily found alive in the appropriate habitat.

But minor quibbles aside, this is a wonderfully useful book. Many of the species have not previously been illustrated in colour and to have comparable pictures of closely related or similar species side by side makes for fast and accurate identifications. In short, the authors have succeeded in producing a landmark in New Zealand conchology. But be quick to get your copy: there is a limited edition of just 250 available and I fear that soon it will be as scarce as a copy of Powell (1979).

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FEEDBACK FROM READERS

"The book is FANTASTIC!! You have both done an amazing job and filled a need that has been waiting decades. Congratulations!"

"Have received your shell book publication and am most impressed with it to say the least - well worth the wait. Congratulations to you both and those associated with its production."

"Book received safely - I am very impressed with it, the photos and the clarity - a useful aid indeed. Thanks so much."

"Congratulations. The book is a visual feast and will be much used."

"The book is certainly a credit to you both, the photos are excellent."

"The book arrived today. It greatly exceeds all my expectations and I see it as a most valuable contribution to all collectors (especially me). It has renewed my desire to get stuck into my collection which has been packed up for years."

"The book looks great!"

"Compliments to you both for the quality production. It will be much used."

"I'm delighted with your book, it's a great contribution to New Zealand conchology."

Shell Club Trip to Motueka
Easter Weekend, April 2010

by Pat Lakeman

It must have been a record number of shell people that gathered in Motueka for Easter weekend on 2-5 April 2010. All together we were 24 - locals Pete and Dee Cresswell and Mike and Sue Young, Ann and Derrick Crosby from Whakatane, Kathy and Les Carson, Ann and Gerard Frengley and Jim and Leigh Crossland from Christchurch, Bert and Jenny van Tiggele and Doreen and Ivan Burr from Nelson, Kevin Mead from Cissy Bay plus Jenny Raven, Jenny and Kerry Walton, Kris and Roger Woods, Graham Aamodt and Pat Lakeman from Wellington. But of course at almost no point were we all together!

The main focus of the trip was a dredging trip in Golden Bay on the Saturday, but lots of other activities took place for different combinations of people – all indulging their various interests. A large group went beach walking on Rabbit Island on the Friday afternoon – straight from the airport for some who arrived that morning. No exciting shell finds but a long walk in beautiful sunshine – the weather was to treat us very kindly all weekend.

After lunch at the motel in Motueka where most of us were staying, we split into two groups and visited the shell collections of Mike and Pete, at their homes. This was a real treat – Pete had laid out many trays of shells on tables in his huge garage, which made viewing very easy. Amongst the hundreds of molluscs on display were many land snails. Also a handsome selection of chitons ("of course no-one collects those" said Pete) and Pete could tell us how he had preserved them to look (and feel!) so terrific. At Mike's we were able to look at his 'official collection' in the house, but also to rummage around, opening drawers everywhere, in an amazing kiwi shed that is bigger than some city apartments.

***Acteon* sp**

We had a barbecue meal outside our motel units and most retired early since we had to get up at 6am or before the next morning. (No complaints – those from Nelson would have needed to start off about an hour earlier!) But rugby fans Kathy, Les, Graham and Pat joined motel manager Stu to watch the Hurricanes play the Crusaders, and the 26-all draw was a fitting result.

Our early starts got 19 of us out to Tarakohe where our boat, the *Maggie Rose*, was moored, ready to go at the appointed hour of 8am. Our skipper wasn't far behind, and we were soon away to dredge for shells in Golden Bay out from the base of the spit. We did six runs, all with Kevin's purpose designed dredge. It was hard to get the dredge down at first, as it needed a boat speed of 4 knots and the boat struggled to go that slowly. But soon we were successful and a busy dredging and sorting process began. The hard work with the dredge was done mainly by Kevin and Derrick, with skipper Mark driving the boat to instructions.

Many bins of shells were sorted – at first some were full of mud as well as shell material but a different location brought up cleaner material to work with. A few *Zeacolpus vittatus* were exciting finds among the many *Maoricolpus roseus roseus*, and live *Amalda australis* and *A. mucronata* came up beautifully clean and bright. Sorting needed more or less all hands and a couple of hours passed very quickly. On the journey back the boat was cleaned up and, back on land, all the dredged shells were taken back to the motels for laying out on tables on the lawn so they could be shared out.

Enjoying the company and the weather.

Drawing numbers from a hat gave us an order to choose in, and eventually all the shells that anyone wanted had been selected. Excess material was taken back to the sea, and we cleaned ourselves up to enjoy a good meal at *The Mooring* restaurant in Motueka.

Next day we split into various groups – Jenny, Kerry, Jenny R, Kris, Roger and Pat had an early morning look at Stephens Beach (near Kaiteriteri), then went to the Riwaka Wharf. Afterwards the same group minus Pat went to Harwood's Hole. The Crosslands went to Maori Bay (Little Kaiteriteri) but could not find anything of interest so picked a feed of cockles. The Crosbys and Frengleys set off for Onekaka to successfully find the freshwater mussel *Echyridella onekaka*. A group had lunch and a chat in the sun back at the motels, and that evening we gathered at the Youngs' home for a splendid pot luck meal in their garden. The "Find of the Day" competition drew several creative entries mostly unremarkable for any molluscan merit, and was won by Derrick on popular vote. Fuelled by good food and good company (and a drink or two), and warmed by the fire (and a drink or two), the conversations continued well after dark.

Those who didn't leave for home early on Monday gathered at the Cresswells' home and loitered in their lovely garden in the sun, having lunch and, you guessed it, talking mostly about shells!

Thanks to Mike and Sue and Pete and Dee for being super hosts, Jenny W for organising the trip and Pete for organising the boat, Kevin for bringing his shell dredge and for doing, with Derrick, most of the hard work to get those shells on board. And thanks to everyone for being great company.

An interesting find was made by Jenny Raven when checking the mud for minute shells later. The find was a small pink Acteon about 7mm high. Bruce Marshall at Te Papa notes it is an undescribed species of Acteon that resembles *Pupa affinis* but only has a single columella fold. It is the species figured by Rudman (1971) as *Acteon sp.* from Mahia and is common offshore right around the North Island. Te Papa has examples as far south as Palliser Bay but the find off Farewell Spit is a first record from the South Island.

On board the 'Maggie Rose' for the dredging.

The shells that we collected include those listed below.
From the dredging in Golden Bay in the curve of Farewell Spit at 20 metres:

Bivalvia:
Anisodonta alata alata
Arthritica bifurca
Arthritica crassiformis
Borniola reniformis
Cardita brookesi
Corbula zelandica
Circomphalus yatei
Diplodonta striatula
Dosina zelandica
Dosinia greyi
Felaniella zelandica
Hiatella arctica
Kellia cycladiformis
Leptomya retiaria retiaria
Limaria orientalis
Linucula hartvigiana
Melliteryx parva
Mysella larochei
Neilo australis
Pratulum pulchellum
Sacella maxwelli
Scintillona zelandica
Serratina charlottae
Talochlamys zelandiae
Tawera spissa

Gastropoda:
Austrofusus glans
Agatha georgiana
Alcithoe fusus
Amalda australis
Amalda mucronata
Buccinulum linea
Cantharidus artizona
Cantharidus sanguineus
Diloma subrostrata
Emarginula striatula
Eulimella levilirata
Gumina dolichostoma
Linopyrga rugata rugata
Liracraea sp.
Maoricolpus roseus roseus
Nozeba emarginata
Odostomia acutangula
Pelicaria vermis
Phenatoma rosea
Poirieria zelandica
Acteon sp.
Seila terebelloides
Seila sp.
Sigapatella tenuis
Struthiolaria papulosa
Tanea zelandica
Turbonilla sp.
Xymene ambiguus
Xymenella pusilla
Zeacolpus pagoda
Zeacolpus vittatus

Scaphopoda:
Antalis nana
Cadulus teliger

Brachiopoda:
Terebratella sanguinea
Calloria inconspicua

From Rabbit Island beach collected
Dosinia lambata
Dosinia subrosea
Gari lineolata
Soletellina siliquens

From Riwaka Wharf, Motueka at low tide
Austrolittorina cincta
Notoacmea sp – probably scapha or potae
Pleuroloba costellaris

From Stephens Beach/Anarewa Point, Tasman Bay at low tide
Peronaea gaimardi

From a tributary of the Onekaka River in the Washbourne Reserve
Echyridella onekaka

Trip to Bougainville, Papua New Guinea

by Kerry Walton

The sun had apparently forgotten that I would be getting up early on Monday 6 July last year. For the most part, things sort of rushed past in a semi-conscious blur – a blur that rather pleasantly had me waking up to quite a mild Sydney morning.

I remember being dragged by the collar to the bus that would take us to our next flight aboard an Air Niugini Boeing 757. This resplendent looking craft was to take us to a country about which we knew very little. Four hours later we had touched down in what the Lonely Planet described as the most dangerous city on Earth. Port Moresby, the capital of Papua New Guinea. Taxiing to the gate we passed in silence the skeletal remains of the same aircraft type that, with luck, we would be flying out in the very next morning.

As the door opened we were hit with the humidity and heat that was a most welcome change from the dreary and drizzling Wellington winter. The aviation enthusiast in me was trying desperately to make my brain take note of the massive Russian-built troop-transport helicopter opposite the runway but my brain was too busy being happy about the heat to notice.

In the air-conditioned terminal, the number of Aussies had us worried that we had not left Australia. The 'I like beer' and 'I just walked the Kokoda Trail' t-shirts were plentiful, not to mention the wooden crocodiles.

On clearing customs, we gathered our bags and headed outside to where a landcruiser (the only way to get around in PNG) was waiting to take us to our motel. The dusty trash and people filled streets were lined with prison-like barbed wire fences encircling every building in an effort to keep looters at bay. Our motel was no different but inside we found grass, tropical trees, the chirps of geckos and a swimming pool, which we made straight for.

The next morning was an early one too but one for which I was vastly more prepared. The flight out to Bougainville took us first to Madang, then over the island of Rabaul whose erupting volcano stood sentinel at the end of the runway before finally we arrived on the small island of Buka.

Waiting for our bags, not far from the rusted M-55 anti-aircraft mount left over from World War Two, we saw Pete and Dee Cresswell, friends we had met through the Shell Club and with whom we would be staying on Bougainville. Bougainville itself lay on the other side of a narrow passage of water filled with a small flotilla of banana boats whose captains were already jostling with one another to see who would take us across. The ute parked, we climbed aboard and minutes later set foot on Bougainville.

The drive to Arawa, our eventual destination, was 177 kilometres, a distance that on New Zealand roads would have taken a little over two hours. We were not in New Zealand. The dirt track was in desperate need of attention. Something that without money exchanging hands, seemed very unlikely to happen. Some money had in fact exchanged hands not too long before our arrival and the few kilometres of sealed road right in the middle of the jungle felt like a Godsend. Of the rest however, the potholes were not unlike what I imagine bomb craters would look like and even if we didn't have a broken speedometer I could tell we were going over them quite fast. It was however a new experience and for the first twenty minutes I was thoroughly enjoying myself. Then, along with much of my backside, the novelty wore off.

For about an hour the densest jungle imaginable rushed past on both side with the occasional hidden village nestled within. The river crossings enabled us to take a rare glimpse of the mountainous highlands of the island's backbone. Then, at the next river, we stopped with Pete and I getting our feet wet for the purpose of collecting some *Thiaria* samples.

Then we were back on the move with only one more stop, this time at a river mouth where we found more *Thiaria*

The golden sand flats of Loloho Lagoon

and some fresh water *nerites*. We struggled to get the name of the river from a passing local with our limited grasp on the intricacies of Pidgin English. The phrase "Wanem nem belong river" got us nowhere. Then we were in Arawa, our home-to-be for the next eight days or so.

The house was bach-like in appearance yet very homely and surrounded by the most tropical of flowers, butterflies, scents and sounds. Now we were truly on holiday.

As ever at a new shell collecting location, I was anxious to get on a beach. First hit was Arawa Beach, a beautiful black sand beach even though it had produced a very limited yield.

Jenny, Pete and I walked up a small river that to us Wellingtonians had seemed like prime Pukpuk territory. The Lonely Planet it seemed, had, according to Pete, exaggerated the number of crocodiles present in Bougainville. That, combined with the amazing coloration of the *nerites* I was finding was enough for me although I could see that mum was not yet convinced. Experience had told us that the Lonely Planet was not the only travelling companion with us prone to exaggeration and mum was certainly keeping a close eye on the edges of the river. With an ever-increasing amount of scrap metal in the water, we reached a bridge and from there, walked back to the town uneaten.

Our next beaching destination was the golden sand flats of Loloho Lagoon where an impressive medley of shells from all families was discovered. I had a feeble attempt at snorkelling having carried my mask in the heat at the back of the cruiser all morning. Soon however, I gave up, as the water was too shallow inside of the fringe reef. It had however given me a nice *Vexillum plicarium* that I doubt I would have found with my head above the water.

Rock-lifting at the fringes of the lagoon, I found a live *Cypraea mauritiana,* a *marginella* that Pete seemed quite pleased about and a sea snake that I could very easily have not been so pleased about. It was very pretty though

Buying tree and landsnails from the local children

and seemed no less shocked than I by our sudden meeting and swam out to deeper water.

Returning to base for a well earned rum and coke and some very kiwi tucker it seemed that collecting had not yet finished. Two shy children had appeared with a small collection of live shells taken from off their small village further up the bay including *Vexillum sanguisugum, Vexillum suluense* and *Imbricaria conularis*. Giving them what was by local standards a fair amount of cash, Pete had shown me a novel method of shell collecting that proved very handy for the duration of our trip. Local help. It would seem that Jenny too had enlisted local help to present us with the impressive collection of shells from Loloho that afternoon. Chasing olives using trails in the sand enabled her local hand to get us quite a haul.

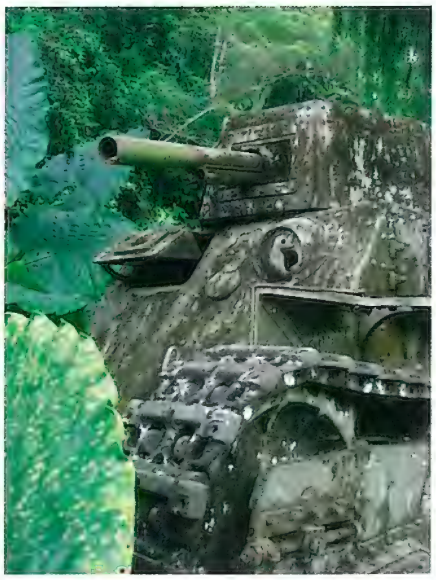
The highway to...

Politically Bougainville is interesting. An autonomous region of Papua New Guinea yet geographically at the northern end of the Solomons chain, the island was the site of major air and sea battles during the second world war.

In the '70's the world's largest copper mine opened up at Panguna in the island's centre. Conflict spawned by the pollution from the mine and independence movements led to several years of guerrilla warfare ending in 1997 when peace talk brokered by New Zealand led to the island's autonomy.

Often living at the extremes of civilisation are the most amazing and generous people. During our time there, I managed to get a glimpse at the work done by the VSA and received a guided tour of the New Zealand Police contingent working there and training the local officers.

All of the Bougainvillians we met seemed genuinely pleased to see us, as tourism has not yet returned to the island.



Japanese leftovers from WW2

One man whose name I have forgotten took us on a tour of Kobuan Bay, showing us the remains of the old city of Arawa, much of which was destroyed during the fighting. A beautiful little church, 'his church' as he had called it with pride, lay on the greenest lawn of grass imaginable and just up the road a Japanese tank and zero fighter from the Second World War appeared at a bend and presented some great photo opportunities.

Perhaps the thing that interested me the most was the tagging on the crumbling walls of what was a five star resort that we came across at the end of our tour. Unlike New Zealand tagging where the objective seems to be letting everybody else know that scribble was here, the tagging had scenes of shootings, rape and threats. It really is sad to think that so much has happened to such nice people in such a beautiful place.

Once, due to the gold and copper profits from the mine, Arawa was one of the wealthiest cities in PNG and was plagued by the 'raskol' bandits that make Moresby such a dangerous place. An elderly man we met at a VSA pot-luck dinner seemed keen to tell me of the war, optimistically describing it as a river, washing the raskols back to the mainland.

And so passed a number of days whose exact order I forget now a year on.

A dredging trip at a former resort Island produced a large *Pictodentalium formosum* and a handful of small shells that we could not find in Pete's impressive library and likely reside in few if any collections other than our own. Pete's library away from home manages to beat my library *at* home due to a great piece of collector's logic. If Dee can spend 'x' on a VSA trip, then it's time to buy a new book. It helped immensely that we could process the shells soon after we got them and having his collection on a database meant Pete could see what was for him, something special.

Definitely the best collecting on the whole trip and possibly the best that I have ever experienced was on the sand and mud flats back on Buka near the airport, about five hours before we were due to fly out. Cymatium species, Conus species, various Mitridae and Costellariidae not to mention the bivalves. You name it, I found them. And a huge thankyou to Pete for cleaning them up for me, labelling and posting them!!

Medley of some of the shells we found.

NZ Coastal Marine Invertebrates Volume 1

General Editor Steve de C. Cook. Canterbury University Press 2010

REVIEWED by Pat Lakeman

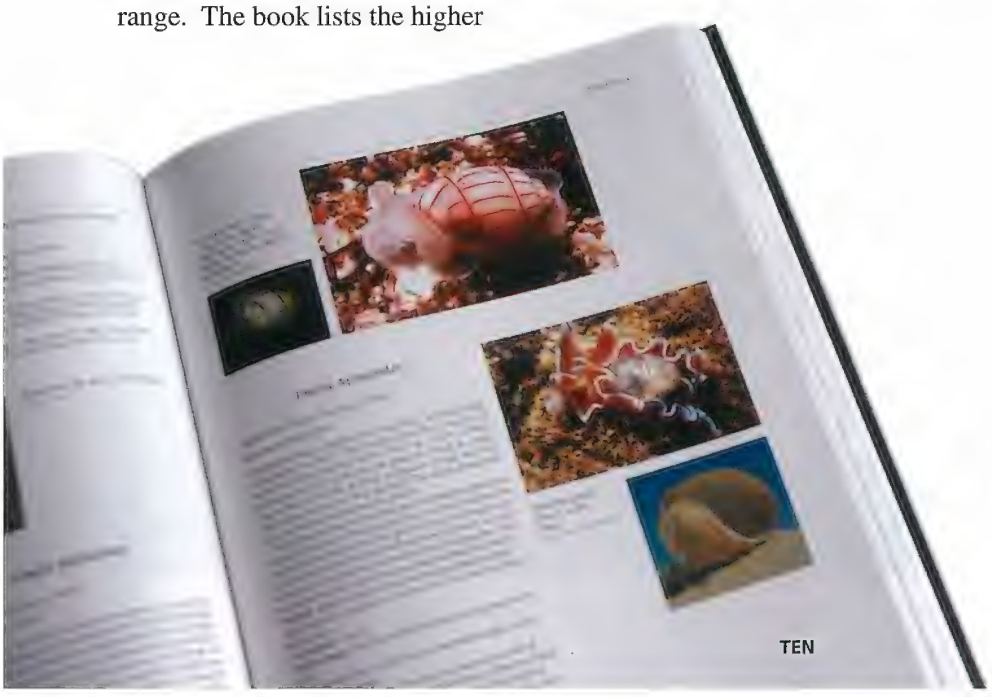
The useful thing about this book for shell collectors is that it is mostly molluscs – they are the subject of close to half of the 640 pages in this very large book. With the second volume (due out in 2012), the set will comprise a comprehensive identification reference and guide to our coastal marine invertebrates: around 1500 species across 20 phyla. If you eventually acquire both books, my advice would be to carry them separately.

For crabs, brachiopods, starfish and sea urchins as well as many other invertebrates, you have to wait. Besides Mollusca, this first volume covers five other phyla - Porifera (sponges), Cnidaria (includes corals, anemones and jellyfish), Ctenophora (also known as comb jellies or sea gooseberries), Platyhelminthes (flatworms), and Nemertea (also known as ribbon worms). It contains more than 1700 illustrations, both colour photographs and line drawings by artist Danielle Archer.

The main part of the book is a series of illustrated entries on individual species. In plain language each animal is described along with its habitat, abundance, distribution and depth range. The book lists the higher taxa pertaining to the six phyla it covers, and the introduction outlines zoological classification, but clearly states that this is an identification guide not a taxonomic reference. The introduction also describes the NZ marine environment from various perspectives including the seafloor, water currents, light, temperatures and biological interactions. A section called Readers' Notes explains how to get the best out of the main part of the book. There is an extensive glossary and a fairly practical short guide to pronouncing the 'Latin' of scientific names.

Photos used with permission of Canterbury University Press.

Editor Dr Steve Cook is a freelance taxonomist and ecologist. He says the aim of the work is to enable marine naturalists – amateur or professional – to identify most of the invertebrates we would see while turning over rocks or digging in soft substrates in the intertidal zone, or while snorkelling or scuba diving, anywhere in New Zealand. So only those species that live in the sunlit waters around our shore are included. Invertebrates less than 10mm in size have been excluded except for a few very common species. The fauna from the Kermadec Islands is not included but where a species' distribution is known to range to the Kermadecs, this is indicated.



At $165 (from Whitcoulls) this book is a substantial investment. Clearly a labour of love for Dr Cook who initiated the "three year" project in 1990. It covers about 470 species of molluscs and many of the photographs are new to me, so I expect to find it helpful with identification – though a few of the photographs are too dark to show the subject well, which is disappointing. For many shell collectors there are less expensive alternatives for identification purposes, but for anyone interested in marine invertebrates more generally, this book is a lovely thing.

Radial-Patterned Bivalves of North-Western Australia by Selwyn Bracegirdle

In September of this year I had the opportunity to collect shells on mudflats and sandbars at Dixon Island near Karratha, Western Australia.

Among the many delights of collecting in a tropical environment were beautifully coloured and patterned bivalves.

Callista impar was the most plentiful species available with paired shells without the animal found easily on the mud / sand surface. In the case of *Mactra cumingii* this was the only specimen found, and *Gari amethystus* one of only two. The photos on these two pages are a sample of the species found. I collected in excess of 25 different bivalve species over three half days.

Low tide between 7.00 and 8.00am meant early starts, but was well worth the effort.

The specimen of New Zealand's *Dosinia anus* on page thirteen would not look out off place among these species.

Callista impar (Lamarck, 1818)

Callista planatella (Lamarck, 1818)

Gari amethystus (Wood, 1815)

Mactra cumingii Reeve, 1854

Further photographs on the next page.

Dosinia contusa (Reeve, 1850)

Tellina virgata Linnaeus, 1758

Its Name is George

by Jill Burnet

At our last A.G.M, our very efficient Kris Woods, who usually runs the raffle for us, deserted us for the pleasures of Melbourne. We were not without a raffle – no complaints on that score – but the substitute that took charge of it left much to be desired.

Firstly, in spite of advice to the contrary from several of us, she quite unnecessarily included a lot of purple tickets in the draw. I didn't have any purple tickets, I hadn't even seen a book of purple tickets, so I couldn't see the point of this. And then, when at last a colour and number that I did have was drawn, and I went up to select a shell, I quite naturally wanted to know what its name was.

The substitute organizer actually said "Its name is George". Well, what sort of answer was that? Was it even correct – it didn't look particularly fat or Hanoverian to me. Mind you, appearances can be deceptive – Trichosirius doesn't look as if it belongs in Capulidae, and there are some very oddly shaped Trochidae. But George? What happened to the Latin ending, and what about the other name? Did she mean George something, or Something george – *Georgius insanus* or *Imperator georgius*. Or was it possible that this longstanding member of the club has not yet caught up with the Linnean binomial system, and was just giving me a common name. I fear that this may have been the case.

The trouble with common names is that while they may be common, they are not universal. For instance, as a young collector I called *Crassula aequilatera* 'triangle shell', but I have heard this term applied to other vaguely three-sided bivalves. When I hear the word 'clam', I think of the Tridacnidae, but often quite a different bivalve is meant.

The binomial system avoids this confusion by giving every shell, and not just shells but every plant and animal, a unique combination of genus and species names. If George is in fact *Georgius regius* no other animal can be called that. The only problem is that names can be, and frequently are, changed. These changes represent a lot of research by taxonomists, but collectors feel that they are sent to try their patience, and they certainly do that.

What was *Georgius hanoverius* at the last A.G.M may well be *Williammariaque orangeorum* by the next, and if you are a long term collector you are probably still calling it *Carolus stuartus*.

I referred to *Crassula aequilatera* above, but I had to look the name up in the checklist, and it is going to be a very long time before I stop thinking of it as *Spisula aequilateralis*.

Hopefully other collectors, at least those of my own vintage, will understand what I mean if the old name slips out. But I do draw the line nowadays at triangle shell … and as for George. It really is asking too much to expect a self respecting shell collector to go home with a shell to which she has not been properly introduced.

Radial banded
Dosinia anus
(Philippi, 1848)

Having collected many *Dosinia anus* over the past few years, it has been a rare occurance to find any unusual specimens. Last years *Cookia* featured two specimens of abnormal shape from Paraparaumu Beach. In early September 2010, further north at Waikawa Beach, among the many *Dosinia anus* washed to the high tide mark, was the specimen shown here with radial banding (39.6mm). This is a very rare pattern to find.

SELWYN BRACEGIRDLE

Calliostoma tigris
(Gmellin, 1791)

Following last year's find at Himatangi Beach two specimens of *Calliostoma tigris* washed up on yet another Kapiti / Horowhenua beach at Waikawa Beach in September 2010.

SELWYN BRACEGIRDLE

Black shells of the Kapiti / Horowhenua coast

One of the delights of collecting along the Kapiti / Horowhenua coastline is hunting for black specimens of, in particular, *Alcithoe arabica*, *Semicassis pyrum* and *Struthiolaria papulosa*, The three specimens photographed are the blackest of each of these three species that I have found. One of the problems in locating beach washed specimens is finding them among the dark colours of drift wood debri. Good specimens are a rare find.

SELWYN BRACEGIRDLE

Alcithoe arabica *Semicassis pyrum* *Struthiolaria papulosa*

Charonia lampas
(Linnaeus, 1758)

Charonia lampas on eggs, Parengarenga Harbour NZ July 2010, photographed by J Raven.

JENNY RAVEN

Talochlamys zelandiae
(Gray, 1843)

This species is frequently washed up in sponge at Easbourne, Wellington after a southerly gale. The finger sponge grows on the shell as shown here. You can save a lot of searching by seeking out large pieces of finger sponge with the base intact. While purple is the common colour, reds and yellows have also been found.

JENNY RAVEN

Scallops and sponges

At a recent Shell Club meeting someone asked, "Why do fan scallops like to live in sponges?" I suggested that perhaps the question should be, "Why do sponges like to live on scallops?" Then the answer becomes clearer. Sponges tend to establish on any surface that provides a stable footing. This includes other bivalves such as *Purpurocardia* spp. But perhaps *Talochlamys* with their roughened exterior of tiny spicules would be particularly favourable. The fact that these small scallops can move and byssaly attach themselves with their foot, may also be an advantage to the developing sponge. But it would not be long before the sponge would severely limit the the bivalve's mobility and finally cause its death. The sponge would continue to grow, invading the area between the valves and eventually completely covering it. Once it grew its characteristic "fingers" it would be easily moved by tidal flows and finish up cast upon a beach where we would eagerly dive on it and tear it apart - "Yea! This is a yellow one" (perhaps).

IAN TOWNSEND

Glycymeris modesta
(Angas, 1879)

These two unusual banded single valves of *Glycymeris modesta* were both found at the same location - the southern end of Simpson's Beach north of Whitianga and Buffalo Beach on the Coromandel Peninsula.

MALCOLM DWIGHT

Checklist of the Recent Mollusca Recorded from the NZ Exclusive Economic Zone[1]

REVIEW PART 1 – by Pat Lakeman

The title of this article is also the title of perhaps the most useful publication ("the Checklist") for NZ shell collectors. Even though it has no illustrations and you can't buy it in any bookshop!

The compilers of this valuable resource are Hamish Spencer, Richard Willan, Bruce Marshall and Tara Murray. The publication is available in its latest version on the internet, at http://www.molluscs.otago.ac.nz/index.html and its maintenance is overseen by Hamish Spencer at the University of Otago.

The great value of the Checklist is that, because it is published on the internet, it can be kept up to date at regular intervals and used by anyone who can access its internet site. It is important to remember that ongoing costs are still incurred by its publishers, since updates require keeping track of the changes that result from taxonomic studies, and of the identification of new species. And then they must be captured into the publication itself, along with the relevant bibliographical reference. In the period between 2004 and 2009, updates did not occur, and the value of the Checklist was gradually being eroded as it became increasingly outdated.

Becoming outdated is the key weakness of traditional publications that name and identify shells. Whether it is Suter's "Manual" [2] of 1913, Powell's major work [3] of 1979 or the various editions of his checklist that preceded it, the closest antecedent to our current Checklist – "Spencer and Willan" [4] in 1996, or the 2009 checklist in the NZ Inventory of Biodiversity [5] which includes known but unnamed species – all capture the latest information at time of going to press. Then immediately they begin to become outdated – as do our numerous other traditional publications about shells, both past and future. Taxonomic changes can be the bane of a shell collector's life, but they are an indication of the amount of work that goes on that affects the names of shells found in NZ.

So long live our internet Checklist, and more strength to its arm. I haven't seen an equivalent for other countries, so it may be another instance in which NZ leads the world. If you are not familiar with the Checklist, I urge you to get to know it. As at early June 2010, it lists 3119 described species and subspecies of marine and non-marine, Recent and subrecent Mollusca recorded from the NZEEZ (which includes the Kermadec Islands). Each entry is supported by one or more bibliographical references that enables you to research in more detail – most of these supporting publications have illustrations and descriptions. An approximate geographical range is given for each species via six defined codes which are also illustrated on a distribution map. Both endemic and adventive species are identified. There is a good search function, so you don't need to know where to find a species in the taxonomical order – the Checklist will find it for you if you know at least part of the animal's name. Or you can find a family or genus of shells and discover the species that it contains. The Checklist's Introduction is an easy read and is helpful if you are getting started; it includes a typical entry with all the details explained.

In short, if you want to correctly name a NZ shell and/or to find out more about it, the Checklist is what you need. I'm obviously a fan, but it does have a few shortcomings. It doesn't have pictures, so if you are at the first stage of trying to identify a shell, you need to start by comparing your shell to pictures either in books or on the internet – or by asking other shell folk or comparing your specimen with those in other collections. Also, if you are a regular user of the Checklist, you will notice that each section tells you when it was last updated but you have no way of knowing what the changes or additions were. The source of the changes is in the publications referred to – but because the previous version of the Checklist has disappeared, you can't make comparisons. I've drawn that to Hamish Spencer's attention, and perhaps that can be fixed in the future – Hamish welcomes constructive suggestions and especially being advised of any errors you might spot.

Finally, if you don't have regular internet access or prefer to work from a printed copy, then you have a user problem. It is a big document to print – and the result immediately acquires the disadvantage of becoming outdated. The Checklist is a child of the internet age.

REVIEW PART 2 – by Jill Burnet

When I heard that our trusty "Checklist of the Recent Mollusca Recorded from the NZ Exclusive Economic Zone" was to be updated after a gap of five years, I was extremely pleased. I had been managing, as I suppose everyone else had, with the 2004 version of the list, with amendments written out on bits of paper and shoved in here and there

among the pages. For instance, after reading Dijkstra & Marshall's paper on the Pectinidae family [6], I wrote out an amendment for that family as best I could. So after a space of five years, I expected that there would be a number of new names, and I even thought I knew what some of them would be. However, when I saw the 2009 update, I was really surprised at the number of changes, and not just changes to the species or genus names but changes to the taxonomic order, especially in the bivalves. Right on the first page of the Bivalvia, I noticed that *Nucula hartvigiana* has become *Linucula hartvigiana*. The change from *Xenostrobus* to *Limnoperna* I was prepared for, as I had picked it up in the Taputeranga Reserve book [7], but I didn't expect *Musculus impactus* instead of *Modiolarca impacta* … and so on. But when I reached page 10 onwards the changes to the taxonomic order gave me a major shock to the system. All my shell collecting life, *Offadesma*, *Myadora*, *Panopea*, *Thracia*, *Cuspidaria* and the like have been at the end of the bivalve lists, at the end of the bivalve section of all the books – and now for some reason, the taxonomists have promoted them and relegated Veneridae to last place. What have they done to deserve this? What have we done to deserve it – is anyone going to pull out all their drawers and rearrange them in the new order??

As for the gastropods, we knew that there would be a lot of changes to the *Notoacmea* following the recent molecular study of them, [8] but there is more – *Melagraphia aethiops*, a common species that we all have, needs its genus label changed to *Diloma*, and while you are at it, go down to the drawer below and change *Turbo smaragdus* BACK to *Lunella* – actually I have never stopped calling it *Lunella* – must have known something. And what about *Nerita* – it's back to *melanotragus*, and the *Nodolittorina* species have become *Austrolittorina*. There are a lot more species in the Pupinidae, Hydrobiidae and Charopidae, and the Cassidae have been rearranged a bit. There are changes to the Epitoniidae, and the Muricidae; *Lepsiella* has become *Haustrum*. The order of the families has been altered – for instance, Terebridae now follow Turridae, so that *Pervicacia tristis* is no longer the last shell in this section of the list. And the changes keep coming – we are receiving frequent updates, all with some further alteration in them – more research equals more changes of name. And it's not just in New Zealand. It seems that all over the world in museums and universities, taxonomists are working away on mollusca. I notice that when I look at any reasonably new book of foreign shells, the taxonomic order is not what I expect, and sometimes I even have to resort to using the index to find what I want. And the moral of this little tale – if it's important that you have the name of a shell accurate and up to date, don't assume that you know it – look it up in the latest version of the Checklist.

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[1] Spencer, H.G., Willan, R.C., Marshall, B.A. & Murray, T.J. 2009. Checklist of the Recent Mollusca recorded from the New Zealand Exclusive Economic Zone. http://www.molluscs.otago.ac.nz/index.html

[2] Suter, H. 1913. Manual of the New Zealand Mollusca. With an atlas of plates.

[3] Powell, A.W.B. 1979. The New Zealand Mollusca: Marine, land and freshwater shells.

[4] Spencer, H.G., Willan, R.C., 1996. The marine fauna of New Zealand: Index to the fauna 3: Mollusca ("1995": published February 1996)

[5] Spencer, H.G., Marshall, B.A., Maxwell, P.A., Grant-Mackie, J.A., Stilwell, J.D., Willan, R.C., Campbell, H.J., Crampton, J.S., Henderson, R.A., Bradshaw, M.A., Waterhouse, J.B. & Pojeta, J. Jr. 2009. Phylum Mollusca: chitons, clams, tusk shells, squids and kin. In Gordon, D.P. (ed.), *New Zealand inventory of biodiversity*. 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia. Canterbury University Press, Christchurch. 161-254.

Spencer, H.G., Marshall, B.A., Willan, R.C. 2009. Recent Mollusca. In Gordon, D.P. (ed.), *New Zealand inventory of biodiversity*. 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia. Canterbury University Press, Christchurch. 196-219.[6] Dijkstra, H.H. & Marshall, B.A. 2008. The Recent Pectinoidea of the New Zealand region (Mollusca: Bivalvia: Propeamussiidae, Pectinidae and Spondylidae) - Molluscan Research 28 (1)

[7] Beu, A.G. & Marshall, B.A. 2008. Mollusca of the Wellington South Coast. Chapter 16 in Gardner, J & Bell, J. (editors) The Taputeranga Marine Reserve.

[8] Nakano, T., Marshall, B.A., Kennedy, M. & Spencer, H. G. 2009. The phylogeny and taxonomy of New Zealand Notoacmea and Patelloida species (Mollusca: Patellogastropoda: Lottiidae) inferred from DNA sequences. Molluscan Research 29 (1)

A Visit to Great Barrier Island

by Ian Townsend

Leita Chrystall and I, and four members of Leita's family, had a three day visit to Great Barrier Island this October. Our interests varied from botany, bush walking and shells to sitting in hot pools and sampling the coffee-shops, so this is by no means an exhaustive appraisal of the beaches. However we did find one (Whangapoua Beach in the north-east area) to have some nice specimens on the drift-line. Unfortunately they were somewhat sparse and partly covered by recently – blown sand, so it was not possible to collect a sample of shell-sand – it was down to hand collecting for a rather limited time.

The first to catch our eye was *Zeacolpus pagoda pagoda* nicely marked with reddish- brown zebra stripes. [An *Alcithoe* had planted its egg on a small *Zeacolpus*, which I thought was rather rude of it.] There were nicely patterned pairs of *Tawera spissa* and Leita found a jet-black example of *Paphies subtriangulata*. Then, becoming more conscious of the smaller things, we spotted numerous *Antisolarium egenum* and amongst them the odd *Epitonium jukesianum* and *E. minorum*. Then I discovered *Tanea lemniscata* (a shell I had not seen before) and *Serrata fasciata*, the orange banded marginellid. We saw a

"normal" looking *Cominella adspersa* whereas at Miranda they appeared to be strangely distorted with a tall spire and aperture almost detached from the body-whorl by a notch at the posterior canal. At Medlands Beach there were lots of brightly-coloured *Talochlamys zelandiae* but we did not find any pairs and most were only of finger-nail size.

The highlight of the trip for us was seeing a magnificent shell collection owned by Mr. Mitchener and originally collected by his mother in the mid 1900's. The owner of the unit we were staying in arranged for us to see this local collection, and we expected to travel to view it. But to our surprise, these kind folks came to us, bringing their entire collection with them on the back of a truck! Two sets of neat home-made drawers of various depths and several boxes, all crammed with shells, mostly collected from local beaches. There were also other New Zealand species they had obtained by exchange, all hand-labelled in Indian ink. It was like seeing collections as I remembered them in my youth. "My mother collected these, you don't get shells here like this these days", he said as he proudly pointed to a huge specimen of *Astraea heliotropium* in perfect condition. There were also locally collected Paper Nautilus and hundreds of small shells in match-box trays. "Powell wanted to get his hands on these, but I knew I wouldn't get them back." A marvellous historic collection, indeed. The labels are 'historic' too, as some of the shells go under different names now and some have been misplaced, but that could be easily put right.

I believe that this collection should stay as a unit. It is a great example of the fauna as it used to be, and it would be nice to see it housed in a museum on Great Barrier Island (there is one) with a proviso that it be maintained and that it cannot be broken up or traded. When current names are added the old labels should be retained.

Finding *Phyllonotus pomum* (Gmelin, 1791)

by Kris Woods

I'm always looking to add to my Muricidae collection.

In May 2010 Roger and I collected shells on Kice Island, SW Florida with Bernice and Gary Schmelz. At low tide, washed up amongst rocks, I found numerous, live *Phyllonotus pomum*. Most of the specimens I found were in excellent condition, nicely coloured and sculptured and some reached 6.5 cm. This is a good size for this species and I was very pleased.

Commonly known as the Apple Murex, *Phyllonotus pomum*'s range extends from the south eastern United States to Brazil. It is one of the most abundant murex shells in Florida and lives at depths of 1 to 20 metres, feeding principally on the common Eastern Oyster, *Crassostrea virginica*.

Five days after visiting Kice Island we flew to the Berry Islands in The Bahamas for a week of shell collecting. One of our most productive collecting spots was a sand shoal between Chub Cay and Great Harbour Cay. Two hours into our second visit to the shoal we had collected a large variety of shells. There wasn't a murex among them but at the time that had not occurred to me as I was far too busy making other exciting discoveries. I kept thinking that the collecting could not get any better. However, my next find put paid to that thought. Under what I initially thought was a mound of sand was a large *Phyllonotus pomum*. Unbelievably, a short time later, I found a second one! They were both spectacularly coloured and sculptured specimens, and very large at 10.5 and 11 cm, with striking chocolate-brown and bright orange apertures. A perfect end to a perfect day!

It is satisfying to have collected good specimens of this murex from different locations and they are a welcome addition to my collection.

More Notes on New Zealand Collected Species

Shell sand from Spirits Bay, Northland

In February 2010 Carol and I visited Spirits Bay in the far north of New Zealand. With the tide low enough we were able to walk onto Pananehe Island and collected shell sand from washups around the south west of the island.

The photographs show the shell sand as gathered (right) and some specimens sifted from the sand. A lot of fun can be had searching this miniature world!

SELWYN BRACEGIRDLE

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2010 Membership Fees: Single $15 • Family $20 • Overseas $30

Cookia Contributions

Members and other readers are invited to submit contributions (handwritten, typed or electronic) but, preferably, these should be in the Editor's hand before the end of May for inclusion in that year's issue (look at a recent issue to see the style to follow).

Please use (unless there is a stated reason not to do so given in your manuscript) the molluscan names in the Checklist of New Zealand Living Mollusca by Spencer, H.G., Willan R.C., Marshall B.A., and Murray T.J., which can be viewed at

http://www.molluscs.otago.ac.nz/index.html

Authors should also save the editor work by checking the spelling of these names very carefully. Following standard practice, in long lists of species the species names should NOT be listed in alphabetical order but in systematic sequence (with Family headings) as in the 'Checklist'. Bruce Marshall, at the Museum of New Zealand Te Papa Tongarewa, is very willing to check identifications or species names for any members who would like his help. Please take advantage of this generous offer. Also note: the Mollusca Section library at the Museum of New Zealand Te Papa Tongarewa is the most comprehensive collection of the world literature on Mollusca in the country.

The Editor is always happy to discuss proposed contributions with members.

Wellington Shell Club Publications

Cookia is the journal of the Wellington Shell Club and is published annually, containing articles and smaller items of interest on shells, shell collecting, and molluscs as well as other related marine topics.

Cookia was first published in 1976; prior to this the Club published a *Circular*, then a *Bulletin*, as well as occassional *Study Notes* on various families of Mollusca.

PUBLICATIONS TO DATE

1956–1965 *Circular* 1 to 21
1967–1975 *Bulletin* 1 to 36
1976–1977 *Cookia* Volume 1, Nos 1, 2, 3
1977–1978 *Cookia* Volume 2, Nos 1, 2, 3
1979–1980 *Cookia* Volume 3, Nos 1, 2, 3
1980–1981 *Cookia* Volume 4, Nos 1, 2, 3
1982–1984 *Cookia* Volume 5, Nos 1, 2, 3, 4
1985–1992 *Cookia* Volume 6, Nos 1, 2, 3, 4
1993–1996 *Cookia* Volume 7, Nos 1, 2, 3, 4 [Index]
1997 *Cookia* Volume 8
1998 *Cookia* Volume 9
1999 *Cookia* Volume 10
2000 *Cookia* Volume 11
2001 *Cookia* Volume 12
2002 *Cookia* Volume 13
2003 *Cookia* Volume 14 [The Shell Lists]
2003 *Cookia* Volume 15
2004 *Cookia* Volume 16
2005 *Cookia* Volume 17
2006 *Cookia* Volume 18
2007 *Cookia* Volume 19
2008 *Cookia* Volume 20
2009 *Cookia* Volume 21
(*Cookia* Volume 7, No 4, is an index of all articles in the Club's publications to 1996)

BACK ISSUES

Back issues of *Cookia* are available at cost plus postage; individual articles, and copies of the Bulletins, Circulars and Study Notes can be ordered at 10c per page plus postage, from Jill Burnet, 84 Brougham Street, Mt Victoria, Wellington, New Zealand; or see our homepage at **www.clublist.co.nz/Club_Websites/Wellington_Shell_Club.aspx**

WHITE WASH – HOW WELL DO YOU KNOW THE SHELL? ANSWERS

1 – *Provocator mirabilis* • 2 – *Coluzea marine* • 3 – *Divalucina cumingi*
4 – *Globisinum drewi* • 5 – *Myadora striata* • 6 – *Pagodula cardueliis*
7 – *Poirieria zelandica* • 8 – *Sassia kampyla* • 9 – *Scutus breviculus*

White wash – how well do you know the shell?

Identify the nine New Zealand shells below. Answers are on page twenty.